



---

### A128 Differential Raccoon Scavenging Among Pig, Rabbit, and Human Subjects

*Dawnie W. Steadman, PhD\*, University of Tennessee, Dept of Anthropology, 250 S Stadium Hall, Knoxville, TN 37996; Angela M. Dautartas, MA, University of Tennessee, 250 S Stadium Hall, Knoxville, TN 37996; Amy Z. Mundorff, PhD, University of Tennessee, Dept of Anthropology, 250 S Stadium Hall, Knoxville, TN 37996; Giovanna M. Vidoli, PhD, University of Tennessee, Dept of Anthropology, Knoxville, TN 37996; and Lee Meadows Jantz, PhD, University of Tennessee, Dept of Anthropology, 250 S Stadium Hall, Knoxville, TN 37996-0720*

---

After attending this presentation, attendees will understand the differences in postmortem scavenger activity between human subjects and two common animal proxies for human decomposition — pigs and rabbits. Attendees will further understand whether raccoon scavenging of human remains is accurately reflected in animal models of human decomposition.

This presentation will impact the forensic science community by demonstrating whether two species of animal models are sufficient substitutes for scavenger and decomposition studies of human cadavers in forensic contexts.

Animal remains are often utilized in forensic research of the postmortem interval when human subjects are unavailable; however, systematic research that directly compares decomposition variables between subject species is lacking in the forensic literature. As a result, no basis exists to determine whether studies based on animal remains are relevant to situations involving questions of the postmortem interval of human forensic cases. A two-year project at the Anthropology Research Facility (ARF) at the University of Tennessee compared three cadaver species — pigs, rabbits, and humans — across three trials that differ by microenvironment and season. Data collected included insect species and activity, scavenger activity, and temperature and morphological changes in the bodies. This presentation focuses on scavenging across all three trials and specifically examines whether raccoons prefer one species over others and the seasonality of scavenger activity.

The project consisted of three trials in which five subjects of each species — pig, rabbit, and human — were placed across three seasons (spring, summer and winter) at the ARF. All fifteen rabbits were placed in cages to deter scavenging, but an additional rabbit was placed without a cage in Trial 1 to compare possible differences with unencumbered scavenger activity. Game cameras were placed in the study area to capture images of scavengers, document the process of scavenging, and identify which subject species were scavenged. Additional documentation of scavenging activity included daily photographs and notations of scavenging on the subjects, number of scavenger species and number of individual scavengers (when possible), and photographs of animal tracks on and around the subjects.

A total of four scavenger species were documented at the study areas, but their activities varied by season and by subject species. Raccoons were the most commonly observed scavenger, followed by birds (including robins, doves, and cardinals), opossum, and skunk. The birds fed upon the maggots, not subject tissues, while the other species did consume tissues. Raccoons are responsible for the majority of the scavenging. While the human subjects were scavenged in all three trials, the pigs and rabbits were only scavenged in the winter (Trial 3). Rabbit scavenging was limited to removal of fur from only two individuals in Trial 3 and there was no consumption, even though the raccoons could access the rabbits through the cages. All five human subjects were scavenged in Trial 3, but three of the humans were preferred by the raccoons who completed scavenging on these individuals prior to moving to the other two humans or to the pigs and rabbits. Only three of the five pigs were scavenged in Trial 3. The anatomical pattern of scavenging also varied between pigs and humans. Raccoon scavenging of humans typically began on the limbs and could include the head and thorax, while scavenging activity on pigs was limited to the head, neck, back, and abdomen. This reflects the anatomical differences between pigs and humans in terms of muscle (meat) distribution.

Seasonality is a key factor in scavenging for pigs and rabbits, but less so for humans. Although scavengers had access to the same species in the summer and fall, scavenging was most extensive in the winter. Allowed a choice, the raccoons preferred human remains and in some instances even showed preference for one cadaver over another. Thus, variation in scavenging intensity and pattern observed on the human subjects is not captured by the non-human study subjects.

This project was supported by the National Institute of Justice, Office of Investigative and Forensic Sciences, United States Department of Justice. The opinions, findings, and conclusions or recommendations expressed in this presentation are those of the researchers and do not necessarily reflect the views of the Department of Justice.

---

#### Forensic Anthropology, Scavenging, Taphonomy